UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
841 Chestnut Building
Philadelphia, Pennsylvania 19107

100323

SUBJECT: Health-Based Soil Clean-Up Levels
Standard Chlorine

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FROM: Dawn A. Ioven, Senior Toxicologist
Technical Support Section (3HW13)

TO: Kate Lose, RPM
DE/MD Section (3HW42)

PURPOSE

Calculations were performed to determine a health-based clean-up level for 1,4-dichlorobenzene (1,4-DCB) in soil at the Standard Chlorine site. 1,4-DCB was selected as an indicator because this compound poses the greatest carcinogenic risk at the site, primarily due to the high levels detected in soil. Consequently,. if the calculated health-based clean-up level presented in this memo for 1,4-DCB is applied as a goal for total chlorinated benzenes, then no significant adverse health impacts are expected to occur as a result of contact with on-site soils under an occupational scenario.

METHODOLOGY

As delineated in EPA guidance (Dermal Exposure Assessment: Principles and Applications, 1992), there are many uncertainties associated with quantifying the risks related to dermal contact with contaminated soil; therefore, this pathway was not evaluated in the derivation of clean-up goals at the site. Further, given the results of the Baseline Risk Assessment (BLRA) for this site, it was determined that the risk posed by the inhalation route was negligible compared to that posed by ingestion; therefore, only the exposure pathway of primary concern, ingestion, was considered.

In calculating a health-based clean-up level for 1,4-DCB in soil, the exposure and toxicity input parameters applied in the BLRA under an occupational exposure scenario for ingestion were assumed, with one exception. Rather than assume, by default, a 24-hour exposure to workers, an 8-hour exposure duration was considered in the clean-up level calculations.

CONCLUSIONS

Given the foregoing approach and assumptions, it was determined that the level of 1,4-DCB in soil that would pose a cancer risk of 1.0E-06 in occupationally-exposed individuals is approximately **750 mg/kg.**